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EXAMINER

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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RALF BUERGEL, WINFRIED ESSER,
STEFAN KRAUSE, MICHAEL OTT, and DER-YAN FRANK ROAN

Appeal 2010-004777
Application 10/786,349
Technology Center 1700

Before BRADLEY R. GARRIS, ADRIENE LEPIANE HANLON, and
CHARLES F. WARREN, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 13-34 in the Office Action mailed January 16, 2009. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2008).

We reverse the decision of the Primary Examiner.

Claim 13 illustrates Appellants' invention of a method for refurbishing a gas turbine blade made from a textured superalloy, and is representative of the claims on appeal:

13. A method for refurbishing a gas turbine blade made from a textured superalloy body coated with a protective coating, the method comprising the steps of:

coating a surface of said body with a high temperature stable surface coating, thereby covering said protective coating;

restoring the microstructure of the superalloy body by performing a solution heat treatment on the body, thereby maintaining said thermally stable surface coating;

removing jointly said surface coating and said protective coating; and
providing a second protective coating on said body.

Appellants request review of the grounds of rejection advanced on appeal by the Examiner: claims 13, 15, 16, 18, 21, 24, 30-32, and 34 under 35 U.S.C. § 102(b) over Czech (EP 0 525 545 A1); and under 35 U.S.C. § 103(a) claims 14, 17, 19, 20, 28, and 29 over Czech in view of Schaeffer (US 6,500,283 B1), claims 22 and 23 over Czech in view of Saltzman (US 4,878,953), claim 25 over Czech in view of Olson (US 4,933,239), claims 26 and 27 over Czech in view of Kashirin (US 2003/0091755 A1), and claim 33 over Czech in view of Haydon (EP 0 186 797 A1). App. Br. 2;¹ Ans. 3, 6, 8, 9, and 10.

Opinion

The principal issue in this appeal is whether the Examiner erred in finding that Czech, common to all grounds of rejection, describes the claimed methods within the meaning of § 102(b) and in concluding that Czech would have rendered the claimed methods obvious within the meaning of § 103(a) to one of ordinary skill in the art in view of Czech's

¹ We considered the Appeal Brief filed May 8, 2009, as modified with the replacement Sections 6 and 7 in the communication filed July 8, 2009. We refer to the page numbers of the Appeal Brief appearing in the latter communication.

disclosure that in refurbishing the corroded surface of a superalloy gas turbine blade, a re-diffusion treatment can be applied following aluminization of the surface to form an aluminide coating which encloses all corrosion products in the surface, wherein “the temperature [of the re-diffusion treatment] should always be kept well below the solution temperature of the base material alloy.” Czech 5:19-20, abstract, and 3:10 to 5:19. Ans. 3-8 and 11-13; App. Br. 3-5; Reply Br. 1-2. In this respect, representative independent claim 13 specifies the step of “restoring the microstructure of the superalloy body by performing a solution heat treatment on the body,” and is further limited by claim 14, dependent thereon, specifying that the temperature of the solution heat treatment is at least that of the γ' -phase if present in the superalloy. In independent claims 13, 16, 28, and 29, the solution heat treatment is performed “on the [superalloy] body,” and in independent claim 30, the solution heat treatment is performed on the textured article made from a superalloy.

The Examiner contends that the term “solution heat treatment” in claim 13 can be interpreted as being “at least the solution temperature of one phase,” which is entirely different “from the solution temperature of the entire alloy, which is a temperature high enough to place all phases in solution (in short, high enough to melt the base part, also known as the solidus temperature).” Ans. 12. The Examiner further contends that “[t]he rediffusion treatment of Czech must be a solution treatment, because it is not possible to diffuse material into a solid crystalline microstructure without placing at least part of it into solution,” and “[t]herefore, the re-diffusion treatment must place at least one phase into solution for diffusion to be possible, and is therefore a solution heat treatment.” Ans. 12.

Appellants contend that the diffusion of the aluminum into the superalloy requires a temperature above the diffusion temperature of aluminum, and thus, Czech discloses a temperature range for that purpose. Reply Br. 1. Appellants contend that Czech teaches “allowing the aluminum to diffuse into the corrosion layer” on the surface of the alloy, and thus teaches “against allowing any of the phases of the base material alloy to go above its solution temperature” so that the base material alloy will not be affected. Reply Br. 1-2. Thus, Appellants contend that Czech “teaches away” from the claimed invention. Reply Br. 2.

We find that Czech would have disclosed to one of ordinary skill in the art that aluminization is carried out at a temperature which forms the aluminide coating that encloses the surface corrosion products to be removed to a sufficient degree, which “temperature should always be kept well below the solution temperature of the base material alloy.” Czech 5:13-20. *See above* p. 2-3.

On this record, we agree with Appellants that the Examiner erred in reaching the findings and conclusions set forth in the Answer in stating the grounds of rejection under §§ 102(b) and 103(a). With respect to § 102(b), the Examiner has not established that as a matter of fact the disclosure of Czech as a whole would have *prima facie* described to one of ordinary skill in the art the claimed method which requires a solution heat treatment on the superalloy body and on the superalloy article in a manner sufficient to have placed a person of ordinary skill in the art in possession thereof.² *See, e.g.,*

² We note that a “teaching away” is relevant to an obviousness analysis but is inapplicable to an anticipation analysis. *Celeritas Techs., Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998) (citation omitted).

In re Spada, 911 F.2d 705, 708 (Fed. Cir. 1990). With respect to § 103(a), the Examiner has not established that prima facie one of ordinary skill in the art would have been led to modify Czech's process by using the solution temperature of at least one phase in the superalloy of the turbine blade as the re-diffusion temperature applied to the surface of the blade even in view of the teaching therein not to use a solution heat treatment temperature as the re-diffusion temperature. *See, e.g., B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582 (Fed. Cir. 1996) ("When obviousness is based on a particular prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. This suggestion or motivation need not be expressly stated." (citation omitted)); *see also, e.g., In re Gurley*, 27 F.3d 551, 552-53 (Fed. Cir. 1994) ("The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." (citations omitted)).

Accordingly, in the absence of a prima facie case of anticipation and of obviousness, we reverse the grounds of rejection under 35 U.S.C. §§ 102(b) and 103(a).

The Primary Examiner's decision is reversed.

REVERSED

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